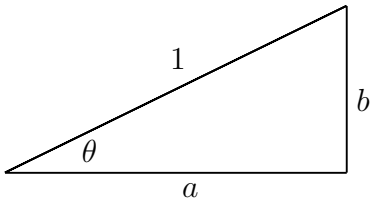
Math 3C Fall 2014
Pre-lecture 9-2 Due: Beginning of lecture-Wednesday, December 3.

This is to be done on your own paper. Please write your name (last name first) on the top right corner along with your discussion section number (B02, B03 etc) and "pre-lecture [number]" (in this case "pre-lecture 9-2").

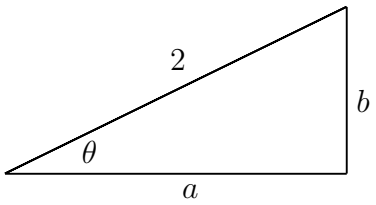
This will be graded on effort and thoughtfulness, not on correctness. With that said, do not feel obligated to write more than necessary. This is intended for you to work on your own.

All units on this assignment will be in radians, not degrees. Consider the following right triangle with hypotenuse length 1.



1. Suppose that $a = .4$. What is b? (Hint: Pythagorean Theorem)
2. Suppose that $a = .2$. What is b?
3. Suppose that $\theta = \pi/4 = 45°$. What is a?
4. Suppose that $\theta = \pi/4 = 45°$. What is b?
5. Suppose that $\theta = \pi/3 = 60°$. What is a?
6. Suppose that $\theta = \pi/3 = 60°$. What is b?
7. Suppose you don't know what θ is, but you know that $\sin(\theta) = .3$. What is b?
8. Suppose you don't know what θ is, but you know that $\sin(\theta) = .3$. What is a?
9. Suppose you don't know what θ is, but you know that $\cos(\theta) = .2$. What is b?
10. Suppose you don't know what θ is, but you know that $\cos(\theta) = .2$. What is a?
11. Suppose that $a = .5$. What is $\sin(\theta)$?

Now pretend instead you have the following triangle with hypotenuse length 2.



12. If $a = 1$, what is b?
13. If $\sin(\theta) = \sqrt{3}/2$, can you find b? How about a? (Hint: Maybe try thinking about shrinking the triangle [replace a with $a/2$ and b with $b/2$] so that its hypotenuse is 1 so that you can use the methods from the earlier problems)